

REMARKS

In the January 24, 2006 Office Action, claims 1, 2 and 12-17 stand rejected in view of prior art. On the other hand, claims 3-11 were indicated as containing allowable subject matter and claims 18-32 and 48-64 were indicated as allowed. Claims 33-47 and 65 were withdrawn from consideration. No other objections or rejections were made in the Office Action. Applicants wish to thank the Examiner for this indication of allowable subject matter and the thorough examination of this application.

Status of Claims and Amendments

In response to the January 24, 2006 Office Action, Applicants have amended claims 1, 3 and 33, as indicated above. Also, Applicants have cancelled claims 2, 13 and 36 and added new claims 66 and 67. Thus, claims 1, 3-12, 14-35 and 37-67 are now pending, with claims 1, 3, 18, 33, 48, 66 and 67 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Interview

On March 17, 2006, the undersigned conducted a personal Interview with Examiner Patel at the U.S. Patent and Trademark Office. Applicants thank Examiner Patel for the courteous Interview and the helpful suggestions offered during the Interview.

Basically, the undersigned argued that the Schmidt patent fails to disclose sealing planes as originally claimed in independent claim 1. However, agreement could not be reached regarding this point. Rather, Examiner Patel maintained the position of the January 24, 2006 Office Action during the Interview. Thus, the undersigned proposed amending independent claim 1 to require sealing planes substantially perpendicular to the central axis and/or to require a continuous (e.g., non-split ring) seal. While agreement was reached that such limitations appear to overcome the Schmidt rejection, Examiner Patel suggested further clarifying amendments for independent claim 1 similar to those included herein to better distinguish. U.S. Patent Nos. 4,188,037 (Abbes et al.) and/or 4,854,600 (Halling et al.). Examiner Patel also indicated the U.S. Patent No. 3,124,502 (Radke) appears to teach making rings split or non-split.

Accordingly, in response to the January 24, 2006 Office Action, Applicants have amended independent claim 1 as explained below.

Applicants respectfully request that U.S. Patent Nos. 4,854,600 (Halling et al.) and 3,124,502 (Radke) be listed on a PTO for 892 and attached to the next communication.

Election of Species

Applicants elected Group I (claims 1-32 and 48-64) drawn to a metallic seal, *without* traverse, for examination on the merits in the March 24, 2005 Response. Thus, claims 33-47 and 65, believed to be directed to the non-elected Group II, drawn to a method of manufacturing have been withdrawn from consideration in this case. However, Applicants respectfully request that these non-elected claims 33-47 and 65 be rejoined in this application and allowed. In particular, claims 33-47 and 65 require all of the limitations of independent claim 1, which is believed to be allowable, as explained below.

New claims 66 and 67, believed to be directed to the non-elected Group II, drawn to a method of manufacturing can be withdrawn from consideration in this case. However, Applicants respectfully request that these non-elected claims 66 and 67 also be rejoined in this application and allowed. In particular, claims 66 and 67 require all of the limitations of allowed independent claims 18 and 48, respectively.

Rejections - 35 U.S.C. § 102

In paragraphs 1 and 2 (pages 2-3) of the Office Action, claims 1, 2, 12, 13 and 16 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 2,867,482 to Schmidt (hereinafter "the Schmidt patent"). In response, Applicants have amended independent claim 1 to more clearly distinguish the Schmidt patent. Claims 2 and 13 have been cancelled.

In particular, independent claim 1 now requires a first annular convex sealing surface lying in a first sealing plane that is perpendicular to the central axis; a second annular convex sealing surface lying in a second sealing plane that is perpendicular to the central axis, the second free end of the second leg portion having an annular flange extending *substantially* parallel to the first and second sealing planes and offset from the second sealing plane in an axial direction towards the first sealing plane. Also, independent claim 1 now requires a one-piece (e.g. monolithic) seal with the annular flange extending beyond the annular first free

end of the first annular leg portion such that the annular flange is exposed when viewed in an axial direction from the first sealing plane toward the second sealing plane, to define the present invention. See Figure below.

This structure is *not* disclosed or suggested by the Schmidt patent or any other prior art of record. Rather, in the Schmidt patent, the ring is configured with sealing surfaces that lie on imaginary sealing cylinders or imaginary sealing cones, that are *parallel to the central axis, and an annular flange that also extends parallel to the central axis*. The Schmidt patent is designed as a radial seal for a piston with an annular groove 12. The piston ring resiliently engages the cylinder wall at 16. In other words, the Schmidt patent lacks substantially parallel sealing *planes* that are perpendicular to the central axis and an annular flange extending in a direction parallel to the sealing planes, as claimed.

It is well settled under U.S. patent law that for a reference to anticipate a claim, the reference must disclose each and every element of the claim within the reference. Therefore, Applicants respectfully submit that claim 1 is not anticipated by the Schmidt patent or any of the other prior art of record. Accordingly, withdrawal of this rejection of independent claim 1 is respectfully requested.

Moreover, Applicants believe that dependent claims 12 and 16 are also allowable over the prior art of record in that they depend from independent claim 1, and therefore are allowable for the reasons stated above. Also, dependent claims 12 and 16 are further allowable because they include additional limitations. Thus, Applicants believe that since the prior art of record does not anticipate the independent claim 1, neither does the prior art anticipate these dependent claims. Accordingly, withdrawal of this rejection of these dependent claims is also respectfully requested.

Rejections - 35 U.S.C. § 103

In paragraphs 3-5 (pages 3 and 4) of the Office Action, claims 14, 15 and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Schmidt patent in combination with U.S. Patent No. 4,640,455 to Grein et al. (hereinafter "the Grein patent") or U.S. Patent No. 3,195,906 to Moyers (hereinafter "the Moyers patent"). In response, Applicants have amended independent claim 1, as explained above.

Applicants believe the unique arrangement of independent claim 1 is not disclosed or suggested by the Schmidt patent (primary reference) as explained above. Also, Applicants

believe the Moyers patent and Grein patent fail to account for the deficiencies of the Schmidt patent with respect to independent claim 1, especially as now amended. Specifically, neither the Moyers patent nor Grein patent disclose or suggest a first annular convex sealing surface lying in a first sealing plane that is perpendicular to the central axis; a second annular convex sealing surface lying in a second sealing plane that is perpendicular to the central axis, the second free end of the second leg portion having an annular flange extending substantially parallel to the first and second sealing planes and offset from the second sealing plane in an axial direction towards the first sealing plane, and a one-piece (e.g. monolithic) seal with the annular flange extending beyond the annular first free end of the first annular leg portion such that the annular flange is exposed when viewed in an axial direction from the first sealing plane toward the second sealing plane. Accordingly, even if these references are combined as suggested in the Office Action, a hypothetical device created by such a combination would not disclose or suggest all of the limitations of independent claim 1, especially as now amended.

It is well settled in U.S. patent law that the mere fact that the prior art can be modified does *not* make the modification obvious, unless the prior art *suggests* the desirability of the modification. Accordingly, the prior art of record lacks any suggestion or expectation of success for modifying the Schmidt patent to create the Applicants' unique arrangement of a pair of convex sealing surfaces lying in substantially parallel sealing planes with an annular flange extending substantially parallel to the sealing planes, as explained above.

As explained above, the prior art of record fails to disclose or suggest the unique arrangement of independent claim 1. Accordingly, Applicants believe that the dependent 14, 15 and 17 are also allowable over the prior art of record in that they depend from independent claim 1, and therefore are allowable for the reasons stated above. Thus, Applicants believe that since the prior art of record does not disclose or suggest the invention as set forth in independent claim 1, the prior art of record also fails to disclose or suggest the inventions as set forth in these dependent claims. Also, dependent claims 14, 15 and 17 are further allowable because they include additional limitations. Therefore, Applicants respectfully request that this rejection be withdrawn in view of the above comments and amendments.

Allowable Subject Matter

In paragraphs 6 and 7 (page 4) of the Office Action, claims 3-11 were indicated as containing allowable subject matter, and claims 18-32 and 48-64 were indicated as allowed. Applicants wish to thank the Examiner for this indication of allowable subject matter and the thorough examination of this application. In response, Applicants have amended claim 3 to place this claim in independent form and accept the allowable subject matter indicated in claims 3-11. Accordingly, Applicants believe claims 3-11, 18-32 and 48-64 are now in condition for allowance.

New Claims

Applicants have added new claims 66 and 67 by the current Amendment as indicated above. New claims 66 and 67 are directed to the non-elected Group II, drawn to a method of manufacturing. However, Applicants respectfully request that these non-elected claims 66 and 67 also be rejoined in this application and allowed. In particular, claims 66 and 67 are directed to methods of manufacturing seals with the structural limitations set forth in claims 18 and 48, respectively. Accordingly, new claims 66 and 67 require all of the limitations of allowed independent claims 18 and 48, respectively.

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In view of the foregoing amendment and comments, Applicants respectfully assert that claims 1, 3-12, 14-35 and 37-67 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested. If there are any questions regarding this Amendment, please feel free to contact the undersigned.

Respectfully submitted,



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